



SCOTT COUNTY, MN COOPERATING TECHNICAL PARTNERS MAPPING ACTIVITY STATEMENT

Mapping Activity Statement No. 2005-1 – Digital Flood Insurance Rate Map Production and Development of Updated Flood Data

In accordance with the Cooperating Technical Partners (CTP) Partnership Agreement dated May 21, 2004 between Scott County, MN and the Federal Emergency Management Agency (FEMA), Mapping Activity Statement (MAS) No. 2005-1 is as follows.

SECTION 1—OBJECTIVE AND SCOPE

The objective of the Flood Map Project documented in this MAS is to update hydrologic and hydraulic data and floodplain mapping for the Credit River and Roberts Creek watersheds in Scott County, MN. The floodplain mapping work maps will be produced in the FEMA Countywide Format. This product will be delivered in NAVD 88 format.

Limited scoping will be necessary to determine the final scope of work for this project because a scoping meeting was held in 2004 for the current work taking place in the County.

The Mapping Partners involved in this project will develop new and/or updated flood hazard data, as summarized in the table below.

Flooding Source	Reach Limits	Hydrologic Analyses	Hydraulic Analyses	Floodplain Mapping	Redelineation Using Effective Flood Profiles and Updated Topographic Data	Refinement or Creation of Zone A
Credit River Mainstem	21.3 river miles from New Market Township to the MN River	X	X	X		
Roberts Creek Mainstem	6.5 river miles from Scott County line to the MN River	X	X	X		
Minnesota River	Scott County line to Jordan				X	

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This Flood Map Project will be completed by the following

- Scott County;
- A consultant to Scott County, selection of a consultant for the H&H modeling will commence shortly;
- MN DNR (State Authorized Representative)
- Michael Baker, Inc. (National Service Provider)

Scott County shall notify FEMA and the NSP by e-mail of all meetings with community officials at least one week prior to the meeting (with as much notice as possible). FEMA and/or the NSP may or may not attend the community meetings.

The activities for this Flood Map Project, including required Quality Assurance/Quality Control (QA/QC) reviews, and the Mapping Partners that will complete them are summarized in the table below. The sections of this MAS that follow the table below describe the specific activities, responsible Mapping Partner(s), FEMA standards that must be met, and resultant map components.

Activities	CTP*	FEMA
Activity 1 – Scoping	X	X
Activity 2 - Outreach	X	
Activity 3 – Field Surveys and Reconnaissance	X	
Activity 4 – Topographic Data Development	X	
Activity 5 – Independent QA/QC Review of Topographic Data	X	
Activity 6 –Hydrologic Analyses	X	
Activity 7–Independent QA/QC Review of Hydrologic Analyses	DNR	
Activity 8 – Hydraulic Analyses	X	
Activity 9 – Independent QA/QC Review of Hydraulic Analyses	DNR	
Activity 10 – Floodplain Mapping (Detailed Riverine or Coastal Analysis)	X	
Activity 11 – Independent QA/QC Review of Floodplain Mapping (Revised Areas)	DNR	
Activity 12 – Base Map Acquisition)	X	
Activity 13 – DFIRM Production (Non-Revised Areas)	X	
Activity 13A – Independent QA/QC Review of DFIRM Production	X	

Activities	CTP*	FEMA
(Non-Revised Areas)		
Activity 14: DFIRM Production (Merging Revised and Non-Revised Information)	X	
Activity 14A: DFIRM Production (Application of FEMA Graphics and Database Specifications)	X	
Activity 14B: Independent QA/QC Review of DFIRM Product Meeting FEMA Graphics and Database Specifications	DNR	
Activity 15: Preliminary DFIRM and FIS Report Distribution	X	
Activity 16: Post-Preliminary Processing	X	
Activity 17: Outreach	X	

*Tasks designated CTP may include use of the contractor (consultant) hired by the County for this project. If the MN DNR is completing a task "DNR" will be designated in the box.

FEMA has developed tools to assist in the development of the flood hazard data studies and the Digital Flood Insurance Rate Maps (DFIRMs) if the CTP wishes to use them. FEMA will, through the NSP, provide all CTPs access to and training in these tools. The tools available at this time include WISE software and the DFIRM production tools. The use of these tools will improve the Map Modernization and efficiency of all mapping partners.

If Scott County chooses not to use these production tools, then the County will be required to submit intermediate project data at major milestones in each Mapping Project in accordance with data capture standards. Submitting data in these standards will aid in more efficient quality control reviews, data storage, archiving, and for future study updates.

The Data Capture Standard submittals will be required at the following study milestones:

- Project Scoping (as specified)
- Field Survey Completed
- Hydrology Completed (draft and final)
- Hydraulics Completed (draft and final)

QA/QC review activities may be performed by the NSP at the discretion of FEMA. Please note the NSP will also be performing periodic audits and overall study/project management to ensure study quality.

FEMA will be providing download/upload capability for intermediate data submittals through the Management Information Portal (MIP). Data submittals uploaded via the MIP will include the same data required prior to the existence of the MIP.

Activity 1 – Scoping

Responsible Mapping Partner: Scott County

Scope: This task involves collecting data from a variety of sources including community surveys, other Federal and State Agencies, NFIP State Coordinators, Community Assistance Visits (CAV's) and FEMA archives. Scott County will evaluate the effective FIS report and FIRM maps to see if it needs to be updated. Lists of mapping needs will be obtained from the MNUSS database, community surveys and CAV's if available. While this has been completed in preparation for our work in 2003 and in anticipation of this project, the results of that research/data collection have not been documented as called for in the *Guidelines and Specifications for Flood Hazard Mapping Partners – Appendix I, Project Scoping Toolbox*. Scott County will work through the documentation for scoping as directed by FEMA.

Data collection was completed during 2003 with the acquisition of 2-foot contours (using LIDAR) and color aerial photography. Therefore, the County has base map materials (corporate limits, roads, orthophotos, etc) along with stream centerline files. The acquired data will be imported into the scoping tool and used during the Scoping Task. In the Scoping Tool all streams will be given unique names, the limits of the effective FEMA studies will be identified, LOMC areas will be identified, and community requests will be documented.

A Project Management Team has been established consisting of the Scott County staff, Scott Soil and Water Conservation District staff, and the MN DNR staff with FEMA's regional engineer available for consultation and review. The Project Management Team will be responsible for coordinating the activities of this project and completing all tasks identified in this Statement of Work.

Scott County has performed limited scoping meetings with interested parties, as well as outlining this type of project as a goal within the Scott Watershed Management Organization's Comprehensive Water Resources Management Plan. Scott County shall be responsible for compiling the necessary information for any future meetings dealing with scoping issues and data collection. These items may include: FIS and FIRM for affected communities; USGS quads for the study area; best available community base map(s); effective FIRM summary; Available Data Inventory; Scoping Map; Scoping Meeting Agenda/Minutes form; Aerial photos/topographic mapping; existing drainage studies or other H&H data; Community master plan(s)/Drainage Master Plan(s); Zoning Maps; Street Maps, As-built plans; and Floodplain Ordinance(s).

The project management team has reviewed the initial mapping needs list, as well as the available data, and will make selections of proposed methods for obtaining/producing flood data with our partners. Any additions or changes to the needs list shall be discussed with all members. All needs shall also be prioritized. In general, highest priority shall be given to the following areas: areas of dense existing or anticipated development, including areas where new road crossings have been constructed over stream(s); areas affected by flood-control structures and/or channelization; areas where natural physical changes in the floodplain have been significant (due to subsidence or extreme erosion, for example); areas that were studied by approximate methods and unmapped areas, especially those with development pressure; areas where the community has experienced flooding outside mapped floodplains, with severe damage to buildings and/or infrastructure; areas where mapped flood hazards do not match those shown on contiguous FIRMs (unless those FIRMs are not considered to be accurate); and areas where flood data (BFEs, floodplains, and regulatory floodways) are likely to be changed the most by a restudy. The Project Management Team has completed this exercise and a priority list has been established. Scott County is working from that list in providing this Mapping Activity Statement. The flooding sources included in this Mapping Activity Statement are additional priority areas that can be covered by current funding levels.

Areas to be studied by detailed and approximate methods have been identified by the Project Management Team. The following issues will continue to be discussed and refined: Review and

Refinement of Flood Hazard Identification Methodologies, Review of Proposed Paneling Scheme, Review and Refinement of Base and Topographic Map Source, and Finalization of Map Production and Database Options.

Standards: All work under Activity 1 shall be performed in accordance with the standards specified in Section 5 of this MAS.

- Deliverables: The Final Scoping Report shall be delivered with all of the components as laid out in the attached "Partner Flood Map Modernization Program Scoping Report" template in Appendix A in accordance with the schedule outlined in Section 6 for this Activity.

Activity 2 – Outreach

Responsible Mapping Partner: Scott County

1. Scope: The outreach activities for a Flood Map Project can best be understood as a process that begins during the Project Scoping phase and continues through the Map Production and Post-preliminary phases. A regulatory overview of required activities is followed by a description of tools that can be used in working with stakeholders to keep them informed and to solicit their input.
2. The overarching goal for conducting outreach is to create a climate of understanding and ownership of the mapping process at the local levels. Well-planned outreach activities can reduce political stress, confrontation in the media, and public controversy, which can arise from lack of information, misunderstanding, or misinformation. These outreach activities also can assist FEMA and other members of the Project Team in responding to congressional inquiries.
3. By proactively reaching out to all key stakeholders as early in the Flood Map Project as possible, the maps can be used to their full potential. The likelihood of appeals may also be reduced or eliminated. Specific Contractor activities shall include, but are not limited to -
 - Establishing two-way communication to address the needs of, inform and obtain feedback from, the stakeholders;
 - Ensuring compliance with due process requirements;
 - Interacting with technical representatives to ensure production of accurate and up-to-date maps;
 - Enhancing ownership by communities
4. Tracking, monitoring, and evaluating outreach activities and adjusting efforts according to ongoing feedback and evolving project needs.
5. All communication with local governments will be done in accordance with Title 44 Code of Federal Regulations Part 66.

Standards: All work under Activity 2 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: Upon Completion of Outreach and Coordination the Contractor shall deliver the following to the FEMA Regional Project Officer in accordance with the schedule outlined in Section 6 for this Activity:

- A report detailing outreach and coordination activities
- Backup or supplemental information used in writing this report

Activity 3 - Field Surveys and Reconnaissance

Responsible Mapping Partner: Scott County and Contractor

Scope: To supplement any field reconnaissance conducted during the Project Scoping phase of this project, Scott County and its Consultant shall conduct a detailed field reconnaissance of the specific study area to determine conditions along the floodplain(s), types and numbers of hydraulic and/or flood-control structures, apparent maintenance or lack thereof of existing hydraulic structures, locations of cross sections to be surveyed, and other parameters needed for the hydrologic and hydraulic analyses.

In addition to the initial field reconnaissance, Scott County's Survey Department and its Consultant shall conduct field surveys, including obtaining channel and floodplain cross sections, identifying or establishing Temporary Bench Marks, and obtaining the physical dimensions of hydraulic and flood-control structures. Scott County also shall coordinate with other Mapping Partners that are collecting topographic data under Activity 4.

Standards: All work under Activity 3 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the Technical Support Data Notebook (TSDN) format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, Scott County shall make the following products available to FEMA in accordance with the schedule outlined in Section 6 for this Activity:

- A report summarizing the findings of the field reconnaissance;
- Maps and drawings that provide the detailed survey results; and
- Survey notebook containing cross sections and structural data.
- NSP Format Survey Database or Intermediate Data Delivery consistent with the NSP Data Capture Standards – Appendix N of the *Guidelines and Specifications for Flood Mapping Partners*

Appendix M may be downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsam.pdf.

Activity 4 - Topographic Data Development

Responsible Mapping Partner: Scott County and Markhurd (contractor)

Scope: In preparation for working with FEMA, Scott County initiated a project in 2003 to obtain the following:

- 6-inch color orthophotography for the entire county,
- 2-foot topography for the entire county with the exception of New Market Township, which was acquired under a separate project in late 2002,
- 1:200 planimetric mapping for entire county (New Market Township was acquired from above-mentioned project)
- Cities are mapped at 1:100, but there is a minimum of 1:200 throughout. The county does have a complete 2-foot contour dataset for the entire county, and
- DTM that will support 2-foot contour model, spot elevations numbering in excess of five Million, and extensive breakline inventory for accurate DEM generation (the county has not generated a DEM to date; this task will be completed as part of this activity.

To supplement the field surveys and LIDAR data conducted under Activity 3, Scott County or its Consultant may obtain additional topographic data of the overbank areas of the flooding sources studied to delineate floodplain boundaries. Scott County or its Consultant also may coordinate with other team members conducting field surveys under Activity 3. Specifically Scott County's Survey Department will collect cross-sections and check control points. Contour interval and/or accuracy for the topographic data shall be selected based on the current FEMA requirements as documented in Guidelines and Specifications for Flood Hazard Mapping Partners.

For this activity, Scott County shall develop topographic maps and/or Digital Elevation Models for the subject flooding sources using the data collected under Activities 3 and 4. In addition, Markhurd shall address all concerns or questions regarding Activity 4 that are raised by Scott County during the independent QA/QC review under Activity 5.

Standards: All work under Activity 4 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: Upon completion of topographic data collection and processing for the Credit River and Roberts Creek Watersheds, Markhurd shall submit these data to Scott County for an independent QA/QC review under Activity 5 in accordance with the schedule outlined in Section 6 for this Activity. Markhurd shall submit data for the remaining flooding sources for a final QA/QC review at the completion of this activity.

In accordance with the TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, Scott County shall make the following products available to FEMA:

- Hardcopy topographic maps;
- Report summarizing methodology and results;
- Mass points and breaklines data on CD-ROM;
- Digital work maps with contours;

- Checkpoint analyses to assess the accuracy of data, including Root Mean Square Error calculations to support vertical accuracy;
- Identification of any remote-sensing data voids and methods used to supplement data voids;
- National Geodetic Survey data sheets for Network Control Points used to control remote-sensing and ground surveys; and
- Metadata compliant with Federal Geographic Data Committee standards.
- NSP Format Terrain Database or Intermediate Data Delivery consistent with the NSP Data Capture Standards – Appendix N of the Guidelines and Specifications for Flood Mapping Partners

Appendix M may be downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsam.pdf.

Activity 5 - Independent QA/QC Review of Topographic Data

Responsible Mapping Partner: Scott County

Scope: Scott County shall review the mapping data generated by Markhurd under Activity 4 to ensure that these data are consistent with FEMA standards and standard engineering practice and are sufficient to prepare the DFIRM.

Standards: All work under Activity 5 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, Scott County shall make the following products available to FEMA in accordance with the schedule outlined in Section 6 for this Activity:

- A Summary Report that describes the findings of the independent QA/QC review; and
- Recommendations to resolve any problems that are identified during the independent QA/QC review.

Appendix M may be downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsam.pdf.

Activity 6 – Hydrologic Analyses

Responsible Mapping Partner: Scott County and its Consultant

Scope: Scott County's Consultant shall perform hydrologic analyses for the drainage areas for the flooding source(s) listed earlier in this MAS. Scott County's Consultant shall calculate peak flood discharges for the 10-, 2-, 1-, and 0.2-percent-annual-chance storm events using a FEMA approved computer program. These flood discharges will be the basis for subsequent hydraulic analyses under Activity 8. In addition, Scott County's Consultant shall address all concerns or questions regarding Activity 4 that are raised during the independent QA/QC review performed by the MN DNR during the QA/QC review under Activity 7.

Standards: All work under Activity 6 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: Upon completion of hydrologic modeling for the mainstems of Credit River and Roberts Creek, Scott County and its Consultant shall submit the results to the MN DNR for an independent QA/QC review under Activity 7. Scott County shall submit the results of the hydrologic analyses for the remaining flooding sources for a final QA/QC review at the completion of this activity.

In accordance with the TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, Scott County shall make the following products available to FEMA in accordance with the schedule outlined in Section 6 for this Activity:

- Digital copies of all hydrologic modeling (input and output) files for the 10-, 2-, 1-, and 0.2-percent-annual-chance storm events;
- Digital and hardcopy versions of the Summary of Discharges Table presenting discharge data for the flooding sources for which hydrologic analyses were performed;
- Digital and hardcopy versions of draft text for Section 3.1, Hydrologic Analyses, of the FIS report; and
- Digital and hardcopy versions of all backup data used in the analysis, including work maps.
- NSP Format Hydrology Database or Intermediate Data Delivery consistent with the NSP Data Capture Standards – Appendix N of the Guidelines and Specifications for Flood Mapping Partners

Appendix M may be downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsam.pdf.

Activity 7 - Independent QA/QC Review of Hydrologic Analyses

Responsible Mapping Partner: MN DNR

Scope: The MN DNR shall coordinate review of the technical, scientific, and other information submitted by Scott County and its Consultant under Activity 6 to ensure that the data and modeling are consistent with FEMA standards and standard engineering practice and are sufficient to prepare the DFIRM. This work shall include, at a minimum, the activities listed below.

- Review the submittal for technical and regulatory adequacy, completeness of required information, and supporting data and documentation. The technical review is to focus on the following:
 - Use of acceptable models;
 - Use of appropriate methodology(ies);
 - Correctly applied methodology(ies)/model(s), including QC of input parameters;
 - Comparison with gage data and/or regression equations, if appropriate; and
 - Comparison with discharges for contiguous reaches or flooding sources.

- Maintain records of all contacts, reviews, recommendations, and actions and make them readily available to FEMA.
- Maintain an archive of all data submitted for hydrologic modeling review. (All supporting data must be retained for 3 years from the date funding recipient submits its final expenditure report to FEMA.)

Standards: All work under Activity 7 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, Scott County shall make the following products available to FEMA in accordance with the schedule outlined in Section 6 for this Activity:

- A Summary Report that describes the findings of the independent QA/QC review and
- Recommendations to resolve any problems that are identified during the independent QA/QC review.

Appendix M may be downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsam.pdf.

Activity 8 – Hydraulic Analyses

Responsible Mapping Partner: Scott County and its Consultant

Scope: Scott County's Consultant shall perform hydraulic analyses for approximately 30 miles of the flooding sources listed earlier in this MAS. The modeling will include the 10-, 2-, 1-, and 0.2-percent-annual-chance events based on peak discharges computed under Activity 6. The hydraulic methods used for this analysis will include FEMA approved methodologies.

Scott County's Consultant shall use the cross-section and field data collected under Activities 3 and 4 to perform the hydraulic analyses. The hydraulic analyses will be used to establish flood elevations and regulatory floodways for the subject flooding sources.

Scott County's Consultant shall use the FEMA CHECK-2 or CHECK-RAS checking program to check the reasonableness of the hydraulic analyses. To facilitate the independent QA/QC review under Activity 9, Scott County's Consultant shall provide explanations for unresolved messages from the CHECK-2 or CHECK-RAS program, as appropriate. In addition, Scott County's Consultant shall address all concerns or questions regarding Activity 6 that are raised by the MN DNR during the independent QA/QC review under Activity 9. Scott County, per its contract language with the successful contractor, will require the contractor to resolve all error messages to the satisfaction of both the County and the DNR at their expense.

Standards: All work under Activity 8 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: Upon completion of hydraulic modeling for the mainstems of Credit River and Roberts, Scott County's Consultant shall submit the results to the MN DNR for an independent QA/QC review under Activity 9. Scott County's Consultant shall submit the results of the hydraulic analyses for the remaining flooding sources for a final QA/QC review at the completion of this activity.

In accordance with the TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, Scott County shall make the following products available to FEMA in accordance with the schedule outlined in Section 6 for this Activity:

- Digital profiles of the 10-, 2-, 1- and 0.2-percent-annual-chance water-surface elevations representing existing conditions using the FEMA RASLOT program or similar software;
- Digital and hardcopy versions of the Floodway Data Table for each flooding source that is compatible with the DFIRM database;
- Digital and hardcopy versions of all hydraulic modeling (input and output) files;
- Digital and hardcopy versions of table with range of Manning's "n" values;
- Explanations for unresolved messages from the CHECK-2 or CHECK-RAS program, as appropriate;
- Digital and hardcopy versions of all backup data used in the analyses;
- Digital and hardcopy versions of draft text for inclusion in the FIS report.
- NSP Format Hydraulic Database or Intermediate Data Delivery consistent with the NSP Data Capture Standards – Appendix N of the Guidelines and Specifications for Flood Mapping Partners

Appendix M may be downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsam.pdf.

Activity 9 - Independent QA/QC Review of Hydraulic Analyses

Responsible Mapping Partner: MN DNR

Scope: The MN DNR shall review the technical, scientific, and other information submitted by Scott County's Consultant under Activity 8 to ensure that the data and modeling are consistent with FEMA standards and standard engineering practice and are sufficient to revise the FIRM. Scott County, per its contract language with the successful contractor, will require the contractor to resolve all data/modeling issues to the satisfaction of both the County and the DNR at their expense. This work shall include, at a minimum, the activities listed below.

- Review the submittal for technical and regulatory adequacy, completeness of required information, and supporting data and documentation. The technical review is to focus on the following:
 - Use of acceptable model(s);
 - Starting water-surface elevations;
 - Cross-section geometry;
 - Manning's "n" values and expansion/contraction coefficients;
 - Bridge and culvert modeling;
 - Flood discharges;

- Regulatory floodway computation methods; and
- Tie-in to upstream and downstream non-revised Flood Profiles.
- Use the CHECK-2 or CHECK-RAS program as appropriate to flag potential problems and focus review efforts.
- Maintain records of all contacts, reviews, recommendations, and actions and make them readily available to FEMA.
- Maintain an archive of all data submitted for hydraulic modeling review. (All supporting data must be retained for 3 years from the date funding recipient submits its final expenditure report to FEMA.)

Standards: All work under Activity 9 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, Scott County shall make the following products available to FEMA in accordance with the schedule outlined in Section 6 for this Activity:

- A Summary Report that describes the findings of the independent QA/QC review; and
- Recommendations to resolve any problems that are identified during the independent QA/QC review.

Appendix M may be downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsam.pdf.

Activity 10 - Floodplain Mapping (Detailed Riverine)

Responsible Mapping Partner: Scott County's Consultant

Scope: Scott County's Consultant shall delineate the 1- and 0.2-percent-annual-chance floodplain boundaries and the regulatory floodway boundaries (if required) for the flooding sources for which detailed hydrologic, and/or hydraulic, and/or coastal analyses were performed. Scott County's Consultant shall incorporate all new or revised hydrologic, hydraulic, and/or coastal modeling and shall use the topographic data acquired under Activity 4 to delineate the floodplain and regulatory floodway boundaries on a digital work map. In addition, Scott County's Consultant shall incorporate the results of all effective Letters of Map Change (LOMCs) within the revised areas as appropriate. Also, Scott County's Consultant shall address all concerns or questions regarding Activity 10 that are raised by the MN DNR during the independent QA/QC review under Activity 11.

Standards: All work under Activity 10 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: Upon completion of floodplain mapping for the mainstems of Credit River and Roberts Creek, Scott County and its Consultant shall submit the results to the MN DNR for an independent QA/QC review under Activity 11. The mapping for the remaining flooding sources is to be submitted for a final QA/QC review at the completion of this activity.

In accordance with the TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, Scott County shall make the following products available to FEMA in accordance with the schedule outlined in Section 6 for this Activity:

- Digital work maps showing the 1- and 0.2-percent-annual-chance floodplain boundary delineations, regulatory floodway boundary delineations, cross sections, BFEs, flood insurance risk zone labels, and all applicable base map features;
- DFIRM mapping files, prepared in accordance with the requirements in *Guidelines and Specifications for Flood Hazard Mapping Partners*;
- Metadata files describing the DFIRM data, including all required information shown in *Guidelines and Specifications for Flood Hazard Mapping Partners*;
- Complete set of plots of DFIRM panels showing all detailed flood hazard information at a suitable scale;
- A Summary Report that describes and provides the results of all automated or manual QA/QC review steps taken during the preparation of the DFIRM;
- Any backup or supplemental information used in the mapping required for the independent QA/QC review outlined under Activity 9; and
- An explanation for the use of existing topography for the studied reaches, if appropriate.
- NSP Format Mapping Database or Intermediate Data Delivery consistent with the NSP Data Capture Standards – Appendix N of the *Guidelines and Specifications for Flood Mapping Partners*

Appendix M may be downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsam.pdf.

Activity 11 - Independent QA/QC Review of Floodplain Mapping (Revised Areas)

Responsible Mapping Partner: MN DNR

Scope: The MN DNR shall review the floodplain mapping submitted by Scott County and its Consultant under Activity 10 to ensure that the results of the analyses performed are accurately represented and meet FEMA mapping standards. This work shall include, at a minimum, the activities listed below.

- Review the cross sections for proper location and orientation on the work map and agreement with the Floodway Data Table.
- Review the BFEs shown on the work map for proper location and agreement with the results of the hydraulic modeling.
- Review the regulatory floodway widths for agreement with the widths shown in the Floodway Data Table and the results of the hydraulic modeling.
- Review the floodplain boundaries for agreement with the flood elevations shown in the Floodway Data Table and the contour lines and other topographic information shown on the work maps.
- Review the floodplain widths at cross sections as shown on the work maps to ensure they match the Floodway Data Table.

- Review the floodplain boundaries as shown on the work maps to ensure they match the Flood Profiles.
- Review the flood insurance risk zones as shown on the work maps to ensure they are labeled properly.
- Review the DFIRM mapping files to ensure they were prepared in accordance with the requirements in *Guidelines and Specifications for Flood Hazard Mapping Partners*.
- Review the metadata files to ensure they include all required information shown in *Guidelines and Specifications for Flood Hazard Mapping Partners*.

Standards: All work under Activity 11 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, Scott County shall make the following products available to FEMA in accordance with the schedule outlined in Section 6 for this Activity:

- A Summary Report that describes the findings of the QA/QC review, noting any deficiencies in or agreeing with the mapping results;
- Recommendations to resolve any problems that are identified during the independent QA/QC review; and
- An annotated work map with all questions and/or concerns indicated, if necessary.

Appendix M may be downloaded from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/pdf/fhm/frm_gsam.pdf.

Activity 12 - Base Map Acquisition

Responsible Mapping Partner: Scott County GIS and Markhurd (contractor)

Scope: Activity 10 consists of obtaining the digital base map for the project. Scott County/Markhurd shall provide the digital base map. The required activities are as follows:

- Obtain digital files (raster or vector) of the base map.
- Secure necessary permissions from the map source to allow FEMA's use and distribution of hardcopy and digital map products using the digital base map, free of charge.
- Certify that the digital data meets the minimum standards and specifications that FEMA requires for DFIRM production.
- Populate the DFIRM database with the information required by FEMA.

Standards: All work under Activity 12 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, Scott County shall make the following products available to FEMA in accordance with the schedule outlined in Section 6 for this Activity:

- Written certification that the digital data meet the minimum standards and specifications and
- Documentation that FEMA can use the digital base map.

Activity 13 – DFIRM Production (Non-Revised Areas)

Responsible Mapping Partner: Scott County GIS Department (Markhurd contractor)

Scope: For all flooding sources except those segments for which updated flood data will be developed under Activities 1 through 11, the Scott County GIS/Markhurd shall convert the information shown on the effective FIRM and Flood Boundary Floodway Map (FBFM) panels for all incorporated and unincorporated areas of Scott County within the Credit River Watershed to digital format in conformance with FEMA DFIRM specifications. Scott County GIS/Markhurd shall use the base map acquired under Activity 12 for the conversion. Scott County GIS shall digitize approximately 16 FIRM panels and 5 FBFM panels. Scott County GIS also shall incorporate the results of LOMCs issued by FEMA since the date of the current effective FIRM for each affected community.

Also, Scott County GIS in conjunction with Markhurd shall address all comments and questions regarding Activity 13 that are raised by Scott County and DNR during the independent QA/QC review under Activity 13A.

Scott County GIS/Markhurd shall not digitize the flood theme for those segments of flooding sources for which updated flood data will be developed. Rather, Scott County GIS/Markhurd shall leave these as “holes” in the digital flood theme that will be filled in as part of Activity 14 using the digital flood data developed under Activities 10, 10A, and 10B.

Standards: All work under Activity 13 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: Upon completion of approximately 30 DFIRM panels, Scott County shall submit the panels to DNR for an independent QA/QC review under Activity 11. In accordance with the TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, Scott County GIS shall make the following products available to FEMA in accordance with the schedule outlined in Section 6 for this Activity:

- Digital work maps showing the 1- and 0.2-percent-annual-chance floodplain boundary delineations, regulatory floodway boundary delineations, cross sections, BFEs, flood insurance risk zone labels, and all applicable base map features;
- DFIRM mapping files, prepared in accordance with the requirements in *Guidelines and Specifications for Flood Hazard Mapping Partners*;
- Metadata files describing the DFIRM data, including all required information shown in *Guidelines and Specifications for Flood Hazard Mapping Partners*;
- Complete set of plots of DFIRM panels showing all detailed flood hazard information at a suitable scale; and
- A Summary Report that describes and provides the results of all automated or manual QA/QC review steps taken during the preparation of the DFIRM, including a check that the road and floodplain relationship is maintained for all non-revised areas.

Activity 13A – Independent QA/QC Review of DFIRM Production (Non-Revised Areas)

Responsible Mapping Partner: Scott County

Scope: Scott County shall review the DFIRM panels submitted by Markhurd under Activity 13 to ensure that the new DFIRM panels accurately represent the information shown on the effective FIRMs and FBFMs for the area mapped. This work shall include, at a minimum, checking the following:

- Cross sections were properly located and oriented as shown on the FIRM or FBFM.
- BFEs are properly located and agree with the BFEs shown on the FIRM.
- Regulatory floodway widths agree with the widths shown on the FIRM or FBFM.
- The 1 and 0.2-percent-annual-chance floodplain boundaries agree with the floodplain boundaries shown on the FIRM and the contour lines, other topographic information, and planimetric information shown on the DFIRM base.
- For coastal studies, setup and runup height elevations shown on the work map agree with those shown on the data table(s), and stillwater elevations are shown where coastal and riverine flooding studied in detail join.
- Flood insurance risk zone designations are indicated properly.
- Road and floodplain relationships are maintained for all unrevised areas.
- DFIRM mapping files meet the GIS file and database format requirements specified in FEMA's *Guidelines and Specifications for Flood Hazard Mapping Partners* and conform to those requirements for content and attribution.
- Metadata files describing the DFIRM data include the required information.

Standards: All work under Activity 13A shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, Scott County GIS shall make the following products available to FEMA in accordance with the schedule outlined in Section 6 for this Activity:

- A Summary Report that describes the findings of the QA/QC review noting any deficiencies in or agreeing with the mapping results;
- Recommendations to resolve any problems that are identified during the independent QA/QC review; and
- An annotated copy of the DFIRM with all questions and/or concerns indicated, if necessary.

Activity 14 –DFIRM Production (Merging Revised and Non-Revised Information)

Responsible Mapping Partner: Scott County GIS

Scope: Upon completion of the floodplain mapping activities for the revised areas (Activities 10, 10A, and/or 10B) and the DFIRM production for non-revised areas (Activity 13), Scott County GIS shall merge the digital floodplain data into a single, updated DFIRM. This work is to include tie-in of flood hazard information for areas that were not studied as part of the Flood Map Project documented in this MAS. Scott County GIS also shall tie in the revised and non-revised Flood Profiles, floodplain boundaries, and regulatory floodway boundaries with contiguous communities that were not studied as part of the Flood Map Project documented in this MAS. Scott County GIS shall coordinate with FEMA and those Mapping Partners responsible for Activities 10, 10A, 10B, and 13, as necessary, to resolve any potential tie-in issues.

Standards: All work under Activity 14 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, Scott County GIS shall make the following products available to FEMA in accordance with the schedule outlined in Section 6 for this Activity:

- Digital work maps showing the 1- and 0.2-percent-annual-chance floodplain boundary delineations, regulatory floodway boundary delineations, cross sections, BFEs, flood insurance risk zone labels, and all applicable base map features;
- DFIRM mapping files, prepared in accordance with the requirements in *Guidelines and Specifications for Flood Hazard Mapping Partners*;
- Metadata files describing the DFIRM data, including all required information shown in *Guidelines and Specifications for Flood Hazard Mapping Partners*;
- Complete set of plots of DFIRM panels showing all detailed flood hazard information at a suitable scale; and
- A Summary Report that describes and provides the results of all automated or manual QA/QC review steps taken during the preparation of the DFIRM.

Activity 14A – DFIRM Production (Application of DFIRM Graphics and Database Specifications)

Responsible Mapping Partner: Scott County GIS

Scope: Scott County GIS shall apply the final FEMA DFIRM graphic and database specifications to the DFIRM files produced under Activity 14. This work shall include adding all required annotation, line pattern, area shading, and map collar information (e.g., map borders, title blocks, legends, notes to user). Scott County GIS shall coordinate with those Mapping Partners responsible for Activities 10, 10A, 10B, 13, and 14, as necessary, to resolve any problems that are identified during Activity 14A.

Standards: All work under Activity 14A shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, Scott County GIS shall make the following products available to FEMA in accordance with the schedule outlined in Section 6 for this Activity:

- Digital work maps showing the 1- and 0.2-percent-annual-chance floodplain boundary delineations, regulatory floodway boundary delineations, cross sections, BFEs, flood insurance risk zone labels, and all applicable base map features;
- DFIRM mapping files, prepared in accordance with the requirements in *Guidelines and Specifications for Flood Hazard Mapping Partners*;
- Metadata files describing the DFIRM data, including all required information shown in *Guidelines and Specifications for Flood Hazard Mapping Partners*;
- Complete set of plots of DFIRM panels showing all detailed flood hazard information at a suitable scale; and
- A Summary Report that describes and provides the results of all automated or manual QA/QC review steps taken during the preparation of the DFIRM.
- NSP Format DFIRM Database or Intermediate Data Delivery consistent with the NSP Data Capture Standards – Appendix N of the *Guidelines and Specifications for Flood Mapping Partners*

Activity 14B – Independent QA/QC Review of DFIRM Product Meeting FEMA Graphics and Database Specifications

Responsible Mapping Partner: Scott County and DNR

Scope: Upon completion of the floodplain mapping activities (Activities 10, 10A, and/or 10B) and DFIRM production activities (Activities 13, 14, and 14A), Scott County and DNR shall review the DFIRM to ensure it meets current FEMA graphic specifications. In addition, Scott County and DNR shall review the DFIRM spatial database to determine if it meets current FEMA database specifications. Scott County and DNR shall coordinate with other Mapping Partners, as necessary, to resolve any problems identified during this QA/QC review. This work shall ensure that the requirements below are met.

- All required DFIRM features are accurately and legibly labeled and follow the examples shown in the FEMA DFIRM specifications. This includes all flood insurance risk zones, BFEs, cross sections, studied streams, mapped political entities, and all roads within and adjacent to the 1-percent-annual-chance floodplains.
- All DFIRM features are correctly symbolized with the appropriate symbol, line pattern, or area shading and follow the requirements in *Guidelines and Specifications for Flood Hazard Mapping Partners*.
- All map collar information is complete, correct, and follows the requirements specified in *Guidelines and Specifications for Flood Hazard Mapping Partners*.
- DFIRM mapping files are in one of the GIS file and database formats specified in FEMA's *Guidelines and Specifications for Flood Hazard Mapping Partners* and conform to those specifications for content and attribution.
- DFIRM database files are in one of the database formats specified in FEMA's *Guidelines and Specifications for Flood Hazard Mapping Partners* and conform to those specifications for content and attribution.
- Metadata files describing the DFIRM data include all required information shown in *Guidelines and Specifications for Flood Hazard Mapping Partners*.
- The FIS report is prepared in the FEMA Countywide or Community Based Format as documented in Appendix J of *Guidelines and Specifications for Flood Hazard Mapping Partners*.

Standards: All work under Activity 14B shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, Scott County GIS shall make the following products available to FEMA in accordance with the schedule outlined in Section 6 for this Activity:

- A Summary Report that describes the findings of the QA/QC review noting any deficiencies in or agreeing with the mapping results and the results of all automated or manual QA/QC steps taken during the independent QA/QC review;
- Recommendations to resolve any problems that are identified during the independent QA/QC review; and
- An annotated copy of the DFIRM with all questions and/or concerns indicated, if necessary.

Activity 15 - Preliminary DFIRM and FIS Report Distribution

Responsible Mapping Partners: Scott County GIS and Contractor

Scope: Activity 15 consists of the final preparation, review, and distribution of the Preliminary copies of the DFIRM and FIS report for community official and general public review and comment. The activities to be performed are summarized below.

Preliminary Transmittal Letter Preparation. The Scott County GIS Department shall prepare letters to transmit the Preliminary copies of the DFIRM and FIS report and related enclosures to all affected

communities, all other Project Team members, the State NFIP Coordinator, the FEMA Regional Office, and others as directed by FEMA.

Preliminary FIS Report Preparation: Scott County and its Contractor shall prepare the FIS report in the FEMA Countywide Format following the FEMA requirements specified in Appendix J of *Guidelines and Specifications for Flood Hazard Mapping Partners*.

Final QA/QC Review of Preliminary DFIRM and FIS Report: The NSP shall perform a final QA/QC review of the Preliminary DFIRM and FIS report, including all data tables, Flood Profiles, and other components of the FIS report. The QA/QC review procedures shall be consistent with the *Guidelines and Specifications for Flood Hazard Mapping Partners*.

Discrepancy Resolution: The NSP shall work with Scott County and its Contractor and FEMA as appropriate to resolve discrepancies identified during the final QA/QC review.

Distribution of Preliminary DFIRM and FIS Report: The NSP shall distribute the Preliminary copies of the DFIRM and FIS report to all affected communities, all other Project Team members, the State NFIP Coordinator, the FEMA Regional Office, and others as directed by FEMA.

News Release Preparation: The NSP shall prepare news release notifications of BFE changes for all affected communities if appropriate and perform QA/QC reviews of the notifications for accuracy and compliance with FEMA format requirements. The NSP shall file the notifications for later submittal to FEMA for review.

Preliminary Summary of Map Actions (SOMA) Preparation: The NSP shall prepare Preliminary SOMAs for all affected communities if appropriate. The SOMAs shall list pertinent information regarding LOMCs that will be affected by the issuance of the DFIRM (i.e., superseded, incorporated, revalidated).

Standards: All work under Activity 15 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners* and the requirements documented in Section 1 and Appendix A of the *FEMA Document Control Procedures Manual*, the NSP shall make the products listed below available to FEMA.

- Preliminary transmittal letters shall be prepared. These letters and any additional letters requested by FEMA shall be prepared in accordance with the current version of the *FEMA Document Control Procedures Manual*;
- Preliminary copies of the DFIRM and FIS report, including all new or updated data tables and Flood Profiles, shall be prepared;
- Preliminary copies of the DFIRM and FIS report shall be mailed to the Chief Executive Officer (CEO) and floodplain administrator of each affected community, all other Project Team members, the State NFIP Coordinator, the FEMA Regional Office, and others as directed by FEMA;
- Preliminary SOMAs, prepared in accordance with FEMA requirements, shall be mailed with the Preliminary copies of the DFIRM and FIS report when appropriate;
- Revised DFIRM mapping files, prepared in accordance with the requirements in *Guidelines and Specifications for Flood Hazard Mapping Partners*, shall be provided on CD-ROM;

- Revised DFIRM database files, prepared in accordance with the requirements in *Guidelines and Specifications for Flood Hazard Mapping Partners*, shall be provided on CD-ROM;
- Revised metadata files describing the DFIRM data, including all required information shown in *Guidelines and Specifications for Flood Hazard Mapping Partners*, shall be provided on CD-ROM; and
- A Summary Report that describes and provides the results of all automated or manual QA/QC review steps taken during the preparation of the DFIRM shall be provided.

Activity 16 - Post-Preliminary Processing

Responsible Mapping Partners: Scott County, its Contractor and FEMA (NSP)

Scope: Activity 16 consists of finalizing the DFIRM and FIS report after the Preliminary copies of the DFIRM and FIS report have been issued to community officials and the public for review and comment. The activities to be performed are summarized below.

Initiation of Statutory 90-Day Appeal Period: When required, upon completion of a 30-day community comment period and/or final coordination meeting with the affected communities, the NSP and Scott County and its Contractor shall arrange for and verify that the following activities are completed in accordance with the current version of the *FEMA Guidelines and Specifications for Flood Hazard Mapping Partners* and *Document Control Procedures Manual*:

- Proposed BFE determination letters are sent to the community CEOs and floodplain administrators;
- News release notifications of BFE changes are published in prominent newspapers with local circulation; and
- The appropriate notices (Proposed Rules) are published in the *Federal Register*.

Resolution of Appeals and Protests: The NSP and Scott County/DNR shall support FEMA in reviewing and resolving appeals and protests received during the 90-day appeal period. For each appeal and protest, the following activities shall be conducted as appropriate:

- Initial processing and acknowledgment of submittal;
- Technical review of submittal;
- Preparation of letter(s) requesting additional supporting data;
- Performance of revised analyses; and
- Preparation of a draft resolution letter and revised DFIRM and FIS report materials for FEMA review.

The NSP shall mail all associated correspondence upon authorization by FEMA.

Preparation of Special Correspondence: The NSP and Scott County/DNR shall support FEMA in responding to comments not received within the 90-day appeal period (referred to as "special correspondence"), including drafting responses for FEMA review when appropriate and finalizing responses when requested by FEMA. The NSP also shall mail the final correspondence (and enclosures if appropriate) and distribute appropriate copies of the correspondence and enclosures upon receipt of authorization from FEMA.

Revision of DFIRM and FIS Report: If necessary, the NSP and Scott County and its Contractor shall work together to revise the DFIRM and FIS report at the direction of the FEMA Regional Project Officer and distribute Revised Preliminary copies of the DFIRM and FIS report to the CEO and floodplain administrator of each affected community, all other Project Team members, the State NFIP Coordinator, the FEMA Regional Office, and others as directed by FEMA.

Final SOMA Preparation: The NSP shall prepare Final SOMAs for the affected communities as appropriate.

Processing of Letter of Final Determination: The NSP and Scott County/DNR shall work with FEMA to establish the effective date for the DFIRM and FIS report, and shall prepare a Letter of Final Determination (LFD) for each affected community for FEMA review in accordance with the FEMA *Document Control Procedures Manual*. The NSP also shall mail the final signed LFDs and enclosures (including the Final SOMA and the Final Rule for publication in the *Federal Register*, when appropriate) and distribute appropriate copies of the signed LFDs and enclosures upon receipt of authorization from FEMA.

Processing of Final DFIRM and FIS Report for Printing: The NSP shall prepare final reproduction materials for the DFIRM and FIS report and provide these materials to the FEMA Map Service Center for printing by the U.S. Government Printing Office. The NSP also shall prepare the appropriate paperwork to accompany the DFIRM and FIS report (including Print Processing Worksheet, Printing Requisition Forms, and Community Map Actions Form) and transmittal letters to the community CEOs.

Revalidation Letter Processing. The NSP, when appropriate, shall prepare and distribute revalidation letters to the community CEOs and floodplain administrators to notify the affected communities about LOMCs for which determinations will remain in effect after the DFIRM and FIS report become effective.

Archiving Data: The NSP shall ensure that technical and administrative support data are packaged in the FEMA-required TSDN format and stored properly in the library archives.

Standards: All work under Activity 16 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners* and the requirements documented in Section 1 and Appendix A of the FEMA *Document Control Procedures Manual*, the NSP and Scott County shall make the following products available to FEMA:

- Documentation that the news release notifications were published in accordance with FEMA requirements;
- Documentation that the appropriate *Federal Register* notices (Proposed and Final Rules) were published in accordance with FEMA requirements;
- Draft and final Special Correspondence (and all associated enclosures, backup data, and other related information) for FEMA review and signature as appropriate;
- Draft and final Appeal and Protest acknowledgment, additional data, and resolution letters (and all associated enclosures, backup data, and other related information) for FEMA review and signature as appropriate;

- Draft and final LFDs (and all associated enclosures, backup data, and other related information) for FEMA review and signature;
- DFIRM negatives and final FIS report materials, including all updated data tables and Flood Profiles;
- Paperwork for the final DFIRM and FIS report materials;
- Transmittal letters for the printed DFIRM and FIS report;
- LOMC Revalidation Letters if appropriate; and
- Complete, organized archived technical and administrative support data.

Activity 17—Outreach

Task 17 – Outreach and Coordination

Responsible Entity: Scott County and FEMA (NSP)

Scope: The outreach activities for a Flood Map Project can best be understood as a process that begins during the Project Scoping phase and continues through the Map Production and Post-preliminary phases. A regulatory overview of required activities is followed by a description of tools that can be used in working with stakeholders to keep them informed and to solicit their input.

The overarching goal for conducting outreach is to create a climate of understanding and ownership of the mapping process at the State and local levels. Well-planned outreach activities can reduce political stress, confrontation in the media, and public controversy, which can arise from lack of information, misunderstanding, or misinformation. These outreach activities also can assist FEMA and other members of the Project Team in responding to congressional inquiries.

By proactively reaching out to all key stakeholders as early in the Flood Map Project as possible, the maps can be used to their full potential. The likelihood of appeals may also be reduced or eliminated. Specific responsible Mapping Partner activities shall include, but are not limited to:

- Establishing two-way communication to address the needs of, inform and obtain feedback from, the stakeholders;
- Ensuring compliance with due process requirements;
- Interacting with technical representatives to ensure production of accurate and up-to-date maps;
- Enhancing ownership by communities; and
- Tracking, monitoring, and evaluating outreach activities and adjusting efforts according to ongoing feedback and evolving project needs.

Standards: All work conducted under this task shall conform to the standards specified for this task in Section 5, “Applicable Standards” of this MAS. In the event of any contradictions between the MAS and the standards, the standards shall control.

Deliverables: Upon Completion of Outreach and Coordination the responsible Mapping Partner shall deliver the following to the FEMA Regional Project Officer in accordance with the delivery dates specified in task orders:

- A report detailing outreach and coordination activities; and
- Backup or supplemental information used in writing this report.

SECTION 2—TECHNICAL AND ADMINISTRATIVE SUPPORT DATA SUBMITTALS AND SPECIAL PROBLEM REPORTS

The Project Team members for this Flood Map Project that have responsibilities for activities included in this MAS shall comply with the data submittal requirements summarized below.

All supporting documentation for the activities in this MAS shall be submitted in the TSDN format in accordance with Appendix M of the FEMA *Guidelines and Specifications for Flood Hazard Mapping Partners*, dated April 2003. Appendix M is available for viewing or download on the FEMA Web site at http://www.fema.gov/pdf/fhm/frm_gsam.pdf. Table 2-1 indicates the sections of the TSDN that apply to each mapping activity.

Table 2-1. Mapping Activities and Applicable TSDN Sections

TSDN Section	Mapping Activities															
	1	2	3	4	5	6, 6 A	7, 7 A	8	9	10, 10 A, 10 B	11	12	13, 13A	14, 14A	15	16
General Documentation																
Special Problem Reports	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Telephone Conversation Reports	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Meeting Minutes/Reports	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
General Correspondence	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Engineering Analyses																
Hydrologic Analyses			X			X	X	X	X	X	X					
Hydraulic Analyses			X			X	X	X	X	X	X					
1. Key to Cross-Section Labeling			X			X	X	X	X	X	X					
Key to Transect Labeling			X			X	X	X	X	X	X					
Draft FIS Report						X	X	X	X							
Mapping Information	X	X		X	X					X	X	X	X	X	X	X
Miscellaneous Reference Information	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

If any issues arise that could affect the completion of an activity within the proposed scope or budget, the responsible Mapping Partner shall complete a Special Problem Report (SPR) as soon as possible after the issue is identified and submitted to FEMA. The SPR is to describe the issue and propose possible resolutions. (For additional information on SPRs, refer to Appendix M, Subsection M.2.1.1 of *Guidelines and Specifications for Flood Hazard Mapping Partners*.)

Additionally, the NSP shall collect and maintain a set of products for all Activities and shall compile a comprehensive TSDN for the entire project.

Section 3—Period of Performance

The mapping activities documented in this MAS will begin on June 30, 2005, and will be completed no later than September 30, 2006. The mapping activities may be terminated at the option of FEMA or Scott County, Minnesota in accordance with the provisions of the Partnership Agreement dated May 21, 2004.

Section 4—Funding/Cost-Sharing

FEMA is providing funding, in the amount of \$ _____, to Scott County for the completion of the Flood Map Project documented in this MAS. Scott County shall provide any additional resources required to complete the assigned activities for this Flood Map Project.

Section 5—Standards

The standards relevant to this MAS are provided in Tables 5-1 and 5-2. Information on the correct volume, appendix, section, or subsection of the FEMA *Guidelines and Specifications for Flood Hazard Mapping Partners* to be referenced for each mapping activity are summarized in Table 5-2. These Guidelines are available for viewing or download from the FEMA Flood Hazard Mapping Web site at http://www.fema.gov/fhm/dl_cgs.shtml.

In addition, Data Capture Standards referenced in the previous sections are to be applied to the project for the data formats to be submitted to FEMA.

Table 5-1. Applicable Standards for Project Activities

Applicable Standards	Activities															
	1	2	3	4	5	6, 6A	7, 7A	8	9	10, 10A, 10B	11	12	13, 13A	14, 14A	15	16
<i>Guidelines and Specifications for Flood Hazard Mapping Partners</i> , April 2003	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
American Congress on Surveying and Mapping Procedures	X	X	X	X	X											
Global Positioning System (GPS) Surveys: National Geodetic Survey (NGS-510), "Guidelines for Establishing GPS-Derived Ellipsoid Heights," November 1997	X	X	X	X	X											
Engineer Manual 1110-1-1000, <i>Photogrammetric Mapping</i> (USACE), July 1, 2002	X	X	X	X	X											
Engineer Manual 1110-2-1003, <i>Hydrographic Surveys</i> (USACE), January 1, 2002	X	X	X													
"Numerical Models Accepted by FEMA for NFIP Usage," Updated April 2003	X	X				X	X	X	X							
<i>Content Standard for Digital Geospatial Metadata</i> (Federal Geographic Data Committee), 1998	X	X		X	X					X	X	X	X	X	X	X
<i>Document Control Procedures Manual</i> , December 2000	X	X													X	X

Table 5-2. Project Activities and Applicable Portions of FEMA Guidelines and Specifications

Activity Number	Activity Description	Applicable Volume, Section/Subsection, and Appendix
1	Pre-Scoping	Volume 1, and Appendix I
2	Scoping	Volume 1, and Appendix I
3	Field Surveys and Reconnaissance	Volume 1, Section 1.4 (specifically Subsection 1.4.2.1) Appendix A, Sections A.4, A.5, A.6, A.7, and A.8 Appendix F, Section F.3 Appendices B, C, M, and N
4	Topographic Data Development	Volume 1, Section 1.4 (specifically Subsection 1.4.2.1) Appendix A, Sections A.2, A.3, A.7, and A.8 Appendix M and N
5	Independent QA/QC Review of Topographic Data	Volume 1, Section 1.4 (specifically Subsections 1.4.1 and 1.4.2.1) Appendix A, Sections A.2, A.3, A.7 (specifically Subsection A.7.5), and A.8 (specifically Subsection A.8.6) Appendix M
6	Hydrologic Analyses	Volume 1, Section 1.4 (specifically Subsections 1.4.2.2 and 1.4.2.4) Appendix A, Section A.4 Appendix C, Sections C.1 and C.7 Appendices E, F, G, H, M, and N

Mapping Activity Statement No. {MAS No.}

{Insert Partner Name}

Table 5-2. Project Activities and Applicable Portions of FEMA Guidelines and Specifications (Cont'd)

Activity Number	Activity Description	Applicable Volume, Section/Subsection, and Appendix
7	Independent QA/QC Review of Hydrologic Analyses	Volume I, Section 1.4 (specifically Subsection 1.4.1) Appendix A, Section A.4 Appendix C, Section C.2 Appendices E, F, G, H, and M
8	Hydraulic Analyses	Volume I, Section 1.4 (specifically Subsections 1.4.2.2 and 1.4.2.4) Appendix A, Section A.4 (specifically Subsection A.4.7) Appendix C, Sections C.3 and C.7 Appendices B, E, F, G, H, M, and N
9	Independent QA/QC Review of Hydraulic Analyses	Volume I, Section 1.4 (specifically Subsection 1.4.1) Appendix A, Section A.4 (specifically Subsection A.4.7) Appendix C, Section C.5 Appendices B, E, F, G, H, and M
10	Floodplain Mapping (Detailed Riverine or Coastal Analysis)	Volume I, Section 1.4 (specifically Subsection 1.4.2.3) Appendix C, Sections C. 4 and C.6 Appendix D, Sections D.2 (specifically Subsection D.2.7) and D.3 (specifically Subsection D.3.7) Appendices E, F, G, H, K, L, M, and N

Table 5-2. Project Activities and Applicable Portions of FEMA Guidelines and Specifications (Cont'd)

Activity Number	Activity Description	Applicable Volume, Section/Subsection, and Appendix
10A	Floodplain Mapping (Redelineation Using Effective Flood Profiles and Updated Topographic Data)	Volume I, Section 1.4 (specifically Subsections 1.4.2.2 and 1.4.2.3) Appendix C, Section C.6 (specifically Subsection C.6.1.3) Appendices K, L, M, and N
10B	Floodplain Mapping (Refinement or Creation of Zone A)	Volume I, Section 1.4 (specifically Subsection 1.4.2.3) Appendix C, Sections C.4 and C.6 Appendices K, L, and M
11	Independent QA/QC Review of Floodplain Mapping (Revised Areas)	Volume I, Section 1.4 (specifically Subsections 1.4.1 and 1.4.2.3) Appendix C, Sections C.4 and C.6 Appendix D, Sections D.2 (specifically Subsection D.2.7) and D.3 (specifically Subsection D.3.7) Appendices E, F, G, H, K, L, and M
12	Base Map Acquisition and Preparation	Volume I, Section 1.3 (specifically Subsection 1.3.1.8) and 1.4 (specifically Subsections 1.4.3.1 and 1.4.3.2) Appendix A, Section A.1 (specifically Subsection A.1.1)
13	DFIRM Production (Non-Revised Areas)	Volume I, Section 1.4 (specifically Subsections 1.4.2.2, 1.4.2.3, and 1.4.3.2) Appendices K, L, and M
13A	Independent QA/QC Review of DFIRM Production (Non-Revised Areas)	Volume I, Section 1.4 (specifically Subsections 1.4.2.2, 1.4.2.3, and 1.4.3.2) Appendices K, L, and M

Table 5-2. Project Activities and Applicable Portions of FEMA Guidelines and Specifications (Cont'd)

Activity Number	Activity Description	Applicable Volume, Section/Subsection, and Appendix
14	DFIRM Production (Merging Revised and Non-Revised Areas)	Volume 1, Section 1.4 (specifically Subsections 1.4.2.3 and 1.4.3.3) Appendices K, L, and M
14A	DFIRM Production (Application of FEMA Graphics and Database Specifications)	Volume 1, Section 1.4 (specifically Subsections 1.4.2.3, 1.4.3.3, 1.4.3.9, and 1.4.3.10) Appendices K, L, and M
14B	Independent QA/QC Review of DFIRM Product Meeting FEMA Graphics and Database Specifications	Volume 1, Section 1.4 (specifically Subsections 1.4.2.3, 1.4.3.3, 1.4.3.9, and 1.4.3.10) Appendices K, L, M, and N
15	Preliminary DFIRM and FIS Report Distribution	Volume 1, Sections 1.4 (specifically Subsections 1.4.2 and 1.4.3) and 1.5 (specifically Subsection 1.5.1) Appendices J, K, L, and M
16	Post-Preliminary Processing	Volume 1, Section 1.5 (specifically Subsection 1.5.2) Appendices J, K, L, and M

Section 6—Schedule

The activities documented in this MAS shall be completed in accordance with the project schedule shown in Table 6-1. If changes to this schedule are required, the responsible Mapping Partner shall coordinate with FEMA and the other Mapping Partners in a timely manner.

Table 6-1. Project Schedule

ACTIVITIES	RESPONSIBLE PARTNER(S)	DATE DUE
Activity 1 – Pre-Scoping	N/A	
Activity 2 - Scoping	N/A	
Activity 3 – Field Surveys and Reconnaissance	Scott Co and Consultant	Aug -Oct. 2005
Activity 4 – Topographic Data Development	Scott Co. and Consultant	Aug 2005
Activity 5 – Independent QA/QC Review of Topographic Data	Scott Co.	Aug 2005
Activity 6 –Hydrologic Analyses	Consultant	Oct 2005
Activity 7–Independent QA/QC Review of Hydrologic Analyses	DNR	Nov 2005
Activity 8 – Hydraulic Analyses	Consultant	March 2006
Activity 9 – Independent QA/QC Review of Hydraulic Analyses	DNR	April 2006
Activity 10 – Floodplain Mapping (Detailed Riverine or Coastal Analysis)	Consultant	May 2006
Activity 11 – Independent QA/QC Review of Floodplain Mapping (Revised Areas)	DNR	June 2006
Activity 12 – Base Map Acquisition	Scott County	complete
Activity 13 – DFIRM Production (Non-Revised Areas)	Scott County	March 2006
Activity 13A – Independent QA/QC Review of DFIRM Production (Non-Revised Areas)	Scott Co/DNR	April 2006
Activity 14 – DFIRM Production (Merging Revised and Non-Revised Information)	Scott Co	July 2006
Activity 14A – DFIRM Production (Application of DFIRM Graphics and Database Specifications)	Scott Co	Aug 2006
Activity 14B – Independent QA/QC Review of DFIRM Product Meeting FEMA Graphics and Database Specifications	Scott Co/DNR	Sept 2006

ACTIVITIES	RESPONSIBLE PARTNER(S)	DATE DUE
Activity 15 – Preliminary DFIRM and FIS Report Distribution	Scott Co	Sept 2006
Activity 16 – Post-Preliminary Processing	Scott Co	Sept – Oct 2006
Activity 17 – Outreach	Scott Co	ongoing

Section 7—Certifications

The following certifications apply to this MAS:

Activity 3 (Field Surveys and Reconnaissance) and Activity 4 (Topographic Data Development)

A Registered Professional Engineer or Licensed Land Surveyor shall certify topographic data, in accordance with 44 CFR 65.5(c). Certification of topographic data by the American Society for Photogrammetry and Remote Sensing is also acceptable.

Activity 6 (Hydrologic Analyses), Activity 8 (Hydraulic Analyses), Activity 10 (Floodplain Mapping– Detailed Riverine or Coastal Analysis), Activity 10A (Floodplain Mapping {Redelineation Using Effective Flood Profiles and Updated Topographic Data}), and Activity 10B (Floodplain Mapping {Refinement or Creation of Zone A})

- A Registered Professional Engineer shall certify hydrologic and hydraulic analyses and data in accordance with 44 CFR 65.6(f);
- A Registered Professional Engineer or Licensed Land Surveyor shall certify topographic information in accordance with 44 CFR 65.5(c); and
- Any levee systems to be accredited will be certified in accordance with 44 CFR 65.10(e).

Activity 10 (Floodplain Mapping– Detailed Riverine or Coastal Analysis), Activity 10A (Floodplain Mapping {Redelineation Using Effective Flood Profiles and Updated Topographic Data}), and Activity 10B (Floodplain Mapping {Refinement or Creation of Zone A}), Activity 11 (Independent QA/QC Review of Floodplain Mapping {Revised Areas}), Activity 13 (DFIRM Production {Non-Revised Areas}), Activity 14 (DFIRM Production {Merging Revised and Non-Revised Information}), and Activity 14A (DFIRM Production {Application of FEMA Graphics and Database Specifications})

The DFIRM metadata files shall include a description of the horizontal and vertical accuracy of the DFIRM base map and floodplain information.

Activity 12 (Base Map Acquisition and Preparation)

- A community official or responsible party shall provide written certification that the digital data meet FEMA minimum standards and specifications.
- The responsible Mapping Partner shall provide documentation that the digital base map can be used by FEMA. Please note that uploading base map data to the MIP does not constitute agreement that the digital base map can be used by FEMA. Documentation that the digital base map can be used by FEMA will still be required.

Certifications must be made at the time the intermediate data is submitted. For example, if hydrologic data is submitted, certification will be required at the time it is submitted.

Section 8—Technical Assistance and Resources

Project Team members may obtain copies of FEMA-issued LOMCs, archived engineering backup data, and data collected as part of the FEMA Mapping Needs Assessment Process from the NSP, who may be contacted by telephone at {Insert NSP telephone number} or by facsimile at {Insert NSP fax number}.

General technical and programmatic information, such as FEMA 265 and the Quick-2 computer program, can be downloaded from the FEMA Web site (<http://www.fema.gov/fhm/>). Specific technical and programmatic support may be provided through the NSP; such assistance should be requested through the FEMA Project Officer specified in Section 11 of this MAS.

Project Team members also may consult with the FEMA Regional Project Officer to request support in the areas of selection of data sources, digital data accuracy standards, assessment of vertical data accuracy, data collection methods or subcontractors, and GIS-based engineering and modeling training.

Section 9—Contractors

Scott County intends to use the services of a contractor (to be determined) as a contractor for the Flood Map Project documented in this MAS. Scott County shall ensure that the procurement for all contractors used for this Flood Map Project complies with the requirements of 44 CFR 13.36

Part 13 may be downloaded in PDF or text format from the U.S. Government Printing Office Web site at http://www.access.gpo.gov/nara/cfr/waisidx_02/44cfr13_02.html.

Section 10—Financial Reporting

Because funding has been provided to Scott County by FEMA for the Flood Map Project documented in this MAS, financial reporting requirements for Scott County will be in accordance with Cooperative Agreement Articles V and VI.

Scott County will meet with FEMA as requested to review the progress of the project. These meetings will alternate between FEMA's Regional Office and the Scott County office.

Scott County will provide to the NSP bi-weekly reports for each of the mapping activity statements. This may, at FEMA's discretion be a spreadsheet template to be completed or the Monitoring Information on Contracted Studies (MICS) system may be used. It may include dollars spent, hours spent, and percent complete of each major Flood Map Project activity (e.g., field survey, terrain, hydrology) on a county basis. Specific reporting requirements will be finalized as a part of the scoping meeting.

Section 11—Points of Contact

The points of contact for this Flood Map Project are Lee Traeger, the FEMA Regional Project Officer; Dawn Gibas (Tracy), the Project Manager for Scott County; or subsequent personnel of comparable experience who are appointed to fulfill these responsibilities. When necessary, the assistance of the NSP should be requested through the FEMA Project Officer, Lee Traeger.

In addition, the NSP is required to coordinate project issues with the responsible Mapping Partner that created the MAS deliverable or portions of the MAS deliverable product and will document all such coordination activities with the CTP and FEMA.

Section 12—Project Coordination

Throughout the project, all members of the Project Team will coordinate, as necessary, to ensure the products meet the technical and format specifications required and contain accurate, up-to-date information. Coordination activities may include:

- Meetings, teleconferences, and videoconferences with FEMA and other Project Team members as needed/requested;
- Telephone conversations with FEMA and other Project Team members on a scheduled basis as needed/requested and an ad hoc basis, as required;
- Updates to the MICS, MNUSS database, and other FEMA status information systems in accordance with requirements in Volumes 1 and 3 of *Guidelines and Specifications for Flood Hazard Mapping Partners*; and
- E-mail, facsimile transmissions, and letters, as required.

Each Party has caused this MAS to be executed by its duly authorized representative.



Dawn R. Gibas, Ph.D., PSS, PWS
Project Manager
Scott County, MN

10.26.05

Date



for Terry Fell, Branch Chief
Hazard and Risk Assessment, Region 5
Federal Emergency Management Agency

10/20/05

Date